Chronic Stable Angina (CSA). The exact pathogenesis of CSFP is unknown, but 80% of patients experience recurrent episodes of typical anginal pain which results in impairment of quality of the life. Endothelial Dysfunction, Inflammation and diffuse atherosclerosis are various proposed pathogenesis of CSFP. CSFP causes significant cardiovascular morbidity due to dynamic ECG changes and symptoms worsening necessitating recurrent hospitalization and they tend to undergo repeated investigations like Coronary Angiogram.
Aim: To see clinical characteristics like risk factors and others of coronary slow flow phenomena.
Methods: A total of 45 patients over a period of 6 months with Non Obstructive coronaries below the age group of 60 years who presented with Ischemic Heart Disease were studied. Coronary Slow Flow was identified using thrombolysis in myocardial infarction (TIMI) frame count (TFC) method introduced by Gibson. TIMI-2 flow grade (i.e. requiring $\geqslant$3 beats to opacify the vessel) or a corrected TIMI frame count >27 frames have been frequently used. The later is based upon images acquired at 30 frames/second and a correction factor of 1.7 for the LAD Risk factors and profiles of all the patients were studied in detail. Those patients who had Coronary Artery ectasia, coronary aneurysm, ventricular dysfunction, valvular heart disease and connective tissue disorders. were excluded.
Results: Out of 45 patients presented with CSFP 95% were males and 5% females with a mean age of 47 years. CSA with Positive Stress Test were 65%, 15% had Unstable Angina and 25% presented with Myocardial Infarction with Positive Troponin I test . Dynamic ECG changes were present in 30% of the cases. Analysing the risk factors, most of the patients had uncontrolled hypertension (75%) and also were smokers (65%). Diabetes was prevalent in 60% of cases and dyslipidemia in 35% of cases. There were no mortalities noted in hospitalized patients.
Conclusion: CSFP was prevalent in wide spectrum if Ischemic Heart Disease presenting as CSA and Acute Coronary Syndrome. Most of the patients presented with CSFP were smokers and had uncontrolled Hypertension.

http://dx.doi:10.1016/j.jsha.2015.05.217

37. Restoration of normal left ventricular geometry after percutaneous mitral annuloplasty – Case report and review of literature

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Surgical mitral valve intervention is not considered suitable in patients with severe functional mitral regurgitation due to severe dilated cardiomyopathy and severe systolic dysfunction. In such patients percutaneous mitral valve intervention is the next best alternative. We are presenting case report of a patient who presented with severe dyspnea progressing to orthopnea and paroxysmal nocturnal dyspnea. He was found to have severe functional mitral regurgitation and severe left ventricle systolic dysfunction. Surgical mitral intervention was not considered suitable and percutaneous mitral annuloplasty was done. At one month follow-up significant improvement in symptoms were noted with improvement in severity of mitral regurgitation severity. At six months follow-up further improvement in symptoms were noted along with significant improvement in the severity of mitral regurgitation and normalization of left ventricle geometry. At one year follow-up his symptoms further improved, left ventricle geometry remained normal and mitral regurgitation severity remained mild to moderate.

Our case demonstrate that in patient with severe LV systolic dysfunction, severe mitral regurgitation and LBBB percutaneous mitral annuloplasty can obviate the need for CRT-D due to significant improvement in LV function and geometry along with regression in severity of mitral regurgitation. Improvement in mitral regurgitation severity and LV geometry started early and kept improving with excellent result at 6 and 12 months.

http://dx.doi:10.1016/j.jsha.2015.05.218

38. Is there a correlation between diastolic dysfunction and coronary artery disease on coronary CT angiography?

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Background: We investigated the relationship of coronary artery calcium score (CCS) and presence of coronary artery disease (CAD) on coronary CT angiography (CCTA) and measures of LV diastolic dysfunction (DD).
Methods: We included 527 consecutive patients (39% women; mean age, 49 ± 12 years) without known CAD who underwent coronary CTA and transthoracic echocardiography within one month. CAD was evaluated on a per-vessel, and per-segment basis for intraluminal diameter stenosis by using a 16-segment model and summed over segments to obtain overall coronary plaque burden (segment involvement score [SIS]; maximum = 16). Transthoracic echocardiography evaluated mitral inflow E wave-to-A wave ratio (EAR), tissue Doppler early mitral annual tissue velocity axial excursion and stage of diastolic dysfunction.
Results: A total of 189 patients (36%) had DD with 50 patients (9.5%) had more than stage 2 DD. The presence of DD was associated with increasing CCS ($p < 0.001$). Similar, there was a statistically significant correlation between EAR and CCS ($r = -0.152$, $p = 0.002$) and SIS ($r = 0.536$, $p < 0.001$). The prevalence of more than stage 2 DD increased with the presence of obstructive CAD (12% versus 6%, $p = 0.020$) and number of obstructive vessels ($p = 0.013$). In multivariable analyses, the independent predictors of more than stage 1 DD included age ($p < 0.001$), LV ejection fraction ($p < 0.001$) and

diabetes ($p = 0.010$). CCS and SIS were not independently associated with DD.
Conclusions: Our analysis suggests that CCS as well as CAD by CCTA are not independently associated with measures of DD on echocardiography.

http://dx.doi:10.1016/j.jsha.2015.05.219

39. Speckle tracking echocardiography in patients with severe aortic stenosis and preserved ejection fraction undergoing aortic valve replacement

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Aim: To evaluate myocardial strain by 2-dimensional speckle-tracking Echocardiography (2D-STE) in patients with severe aortic stenosis (AS) and preserved left ventricular (LV) ejection fraction (EF), before and after aortic valve replacement (AVR).
Introduction: Severe AS is characterized by chronic increase in the LV pressure and LV hypertrophy which lead to changes in the LV geometry. Impairment of the LV function in severe AS occurs despite of normal LV volumes and EF. Strain analysis by (2D-STE) can detect early and subtle changes of the LV function and can help in referring patients for earlier AVR to obtain better outcome.
Methods: 15 selected patients with severe AS (aortic valve area $<1\ cm^2$) and normal EF referred for surgical AVR (SAVR) or transcutaneous aortic valve implantation (TAVI).

All patients had 2D transthoracic echocardiography and 2D-STE to assess both longitudinal and circumferential strain before and after AVR.
Results: the entire study cohort showed significant improvement in myocardial strain values. Global longitudinal strain (GLS −15.3 vs. −18.5) mean change of 2.1% and p value = 0.02 and global circumferential strain (GCS −28.9 vs. −31.9), mean change of 2.9% and p value = 0.036.
Conclusions: following AVR a significant improvement in LV myocardial strain both longitudinal and circumferential occurred. Strain analysis by 2D-STE can detect early and subtle changes in LV systolic function and might play a role in early intervention for severe AS with preserved ejection fraction.

http://dx.doi:10.1016/j.jsha.2015.05.220

40. Optical coherence tomography correlates of complex lesions evaluated by coronary angiography in patients with acute coronary syndromes

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Background: Plaque rupture (PR) and superimposed thrombosis have been shown as the most frequent underlying substrate in acute coronary syndromes (ACS). Coronary angiography is a luminogram that is not able to define in-vivo features of the culprit plaques. The aim of the study was to use optical coherence tomography (OCT) to investigate the pathology underlying complex (CL) and non-complex angiographic lesions (NCL).
Methods: We retrospectively enrolled 107 ACS patients admitted to our institution; 83 with Non-ST elevation ACS (NSTE-ACS) and 24 with ST-elevation myocardial infarction (STEMI). Coronary angiography was performed and culprit lesions were classified according to Ambrose criteria into NCL ($n = 47$) and CL ($n = 60$). In STEMI patients, angiographic and OCT analysis were performed after mechanical thrombus aspiration. OCT analysis of these culprit lesion was performed to identify plaque morphology; either PR or intact fibrous cap (IFC), as well as the presence of superimposed thrombosis, lipid rich plaque, thin cap fibroatheroma (TCFA), and minimal lumen area (MLA).
Results: OCT analysis showed that 58 lesions (54.2%) were classified as PR and 48 lesions (44.9%) were associated with thrombi. Lipid rich plaques were identified in 62 culprit plaques (57.9%). PR, intracoronary thrombi, lipid rich plaques and thin cap fibroatheroma (TCFA) were more frequent in CL compared with NCL (71.7% vs 31.9%, 63.3% vs 21.3%, 71.7% vs 40.4% and 46.7% vs 21.3% respectively). PR (31.9%) with superimposed thrombus (21.3%) may be also detected in NCL. In STEMI patients, there was no significant difference regarding OCT plaque features between NCL and CL.
Conclusion: In conclusion, OCT demonstrates PR and thrombosis in the majority of ACS patients presenting with CL. Of note, one third of NCL has PR and thrombosis by OCT. In STEMI, coronary angiography is of limited utility in identifying PR by means of CL and should be implemented with OCT to tailor future therapies.

http://dx.doi:10.1016/j.jsha.2015.05.221

41. Echocardiographic interpretation of cardiac function with puberty in girls

Azza Abul-Fadl, Hala Agha, Nevvine Tawfik, Abed, Mohamed ElSayed

Puberty is accompanied by significant changes in hemodynamics that can influence interpretation of clinical states. However the extent to which this is influenced by the nutritional status of children is poorly understood.
Aim: To study the changes in cardiac dimensions with onset of early puberty and their relation to growth and nutritional status in females.
Methods: Survey was conducted for 200 schools girls aged 9–12 years including full cardiac exam, blood